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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,645	10/24/2003	Dale K. Hitt	DSI-P105	8624

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EXAMINER

SHECHTMAN, SEAN P

ART UNIT PAPER NUMBER

2125

DATE MAILED: 12/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/692,645	Applicant(s) HITT ET AL.	
	Examiner Sean P. Shechtman	Art Unit 2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/24/03; 6/28/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-21 are presented for examination.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. See page 4 and pages 8-10 of the instant specification.

Drawings

3. The drawings are objected to because referring to Fig. 2, the repeater node 177 is shown as an actuator node 177 (See page 14, paragraph 44 of the instant specification).
4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Fig. 1, all elements; Fig. 2, element 192; Fig. 3, element 351; Fig. 4, element 416; Fig. 12, element 1200-1205, 1207-1211, 1213, 1221, and 1222.
5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference character(s) mentioned in the description: Fig. 7, element 751 (See page 30, paragraph 79 of the instant specification).
6. The drawings are objected to under 37 CFR 1.83(a) because they fail to show system 120 as described in the specification (See page 18, paragraph 54 of the instant specification), and a common node connected to all the valves (See page 36, paragraph 92 of the instant

specification). Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d).

7. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the voltage measurement circuit coupled to the common line (claims 3 and 13), the voltage measurement circuit coupled to the control line (claims 5 and 14), the current measurement circuit coupled to the common line (claims 7 and 15), the current measurement circuit coupled to the control line (claims 9 and 16), a transistor (claims 4 and 6), an operational amplifier (claims 4 and 6), an inductively coupled current detector (claims 8 and 10), and an in-line resistor (claims 8 and 10) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

8. The examiner has provided a number of examples of the drawing deficiencies above, however, the list of deficiencies may not be all inclusive. Applicant should refer to these as examples of deficiencies and should make all the necessary corrections to eliminate the drawing objections.

Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional

replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

9. The disclosure is objected to because of the following informalities:

Referring to page 1, paragraph 1, the examiner respectfully submits that the cross referenced application numbers should be filled in.

Referring to page 30, paragraph 79, the examiner respectfully submits that the soil is shown as element 754, not element 755.

Appropriate correction is required.

10. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claim 18 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 18 requires the limitation of

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the first desired duration comprising turning off the first irrigation zone entirely, however, claim 17 from which claim 18 depends, requires the limitation of the first irrigation zone being turned on for the first desired duration. The instant application, prior art provided by applicant, and prior art or art known to the examiner fail to provide for how an irrigation zone can be turned on for a duration when it is entirely off. The specification fails to provide enablement for an irrigation zone that can be turned on for a duration when it is entirely off, and one of ordinary skill in the art would not know how an irrigation zone can be turned on for a duration when it is entirely off.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-16, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

12. Claim 1 recites the limitation "the assertion and deassertion" in lines 6-7. Claim 1 recites the limitation "the on/off duration" in line 12. Claim 1 recites the limitation "the first value" in lines 12-13. Claim 11 recites the limitation "the assertion and deassertion" in lines 5-6. Claim 11 recites the limitation "the on/off duration" in line 11. Claim 11 recites the limitation "the first value" in lines 11-12. Claim 21 recites the limitation "the programming of the first irrigation zone" in lines 4-5. Claim 21 recites the limitation "the start time" in lines 5-6. Claim 21 recites the limitation "the irrigation frequency" in line 6. There is insufficient antecedent basis for these limitations in the claim(s).

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13. Claim 18 requires the limitation of the first desired duration comprising turning off the first irrigation zone entirely, however, claim 17 from which claim 18 depends requires the limitation of the first irrigation zone being turned on for the first desired duration. Therefore it is not clear how the first irrigation zone can be turned on for a duration when it is entirely off.

14. Due to the number of 35 USC § 112 rejections, the examiner has provided a number of examples of the claim deficiencies in the above rejections, however, the list of rejections may not be all inclusive. Applicant should refer to these rejections as examples of deficiencies and should make all the necessary corrections to eliminate the 35 USC § 112 problems and place the claims in proper format.

15. Due to the vagueness and a lack of clear definition of the terminology and phrases used in the specification and claims, the claims have been treated on their merits as best understood by the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

16. Claims 1-21 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by U.S. Pub. No. 2004/0090329 to Hitt or U.S. Pub. No. 2004/0090345 to Hitt or U.S. Pub. No.

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2004/0100394 to Hitt. See figures 13-14 and the description thereof, which are the same figures and description used to provided enablement for claims 1-21 of the instant application.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

17. Claims 1-3, 5, and 7-21 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 4,811,221 to Sturman.

Referring to claims 1, 11, Sturman teaches a control system for an automatic sprinkler system (Abstract; Col. 10, lines 25-28), the automatic sprinkler system including a control line and a common line coupled to control a valve (See Fig. 8 or 10), the control system comprising:

a relay coupled in series with the common line (See upper right circuit of Fig. 8 or 10);

a sensing circuit coupled to detect the assertion and deassertion of the valve (Col. 8, lines 18-56; Figs. 8 and 9a, element 36); and

a controller coupled to receive a control data (Col. 10, lines 7-24), the controller providing a control signal to enable the relay based on the control data (Col. 10, lines 60-65; Col. 11, claims 8-10), wherein the relay is turned on or off based on the control data for controlling the on/off duration of the value (Figs. 8 or 10; Col. 6, lines 40-41; Col. 6, line 40 – Col. 7, line 42; Col. 11, claims 1-7).

The relay is shown as the upper right circuit controlled by the microprocessor in figures 8 or 10. Clearly, this circuit is connected in series with the common line shown at the bottom of this circuit. During programming the microcomputer detects whether or not the on/off switch is a first switch depression (a valve turn on signal) or a second switch depression (a valve turn off signal) (Col. 8, lines 18-56; Figs. 8 and 9a, element 36). Sturman clearly teaches the microcomputer receives control data in verifying the need to turn the valve, wherein the control data is from, among other things, at least a moisture sensor stuck in the lawn or garden, (Col. 10, lines 7-24), wherein the microcomputer is clearly responsive to the conditions from the sensor to control the relay (Col. 10, lines 60-65; Col. 11, claims 8-10). The examiner respectfully submits that the use of the pushbutton switch in programming the microcomputer to control the relay described in column 9 or column 8 or claims 1-7 of Sturman is also control data received by the controller used to enable the relay based on the control data. Clearly the microprocessor enables or disables the relay through output pin 20 of output port 5 (Figs. 8 or 10; Col. 6, lines 40-41). The high output state of the microprocessor represents the valve on condition and the low output state represents the valve off condition (Col. 7, lines 28-30). The coil 88 responds to the voltage or current change from the output of the microcomputer to control the valve on or off (Col. 6, line 40 – Col. 7, line 42), wherein this is accomplished for a specified duration programmed in the microcomputer (Col. 8; Col. 11, claims 1-7).

The examiner respectfully submits that the claims, as such, do not require any control of a sprinkler system, much less control of an automatic sprinkler system. In fact, the claims, as such do not even require control of any type of water or fluid system, only control of a valve.

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The claims also do not require a specified time when detection of the assertion and deassertion of the valve occurs.

The examiner respectfully submits that the claims, as such, do not require that the limitation of a sensing circuit coupled to detect the assertion and deassertion of the valve be functionally utilized with any other limitation in the claims.

The recitation a control system for an automatic sprinkler system, the automatic sprinkler system including a control line and a common line coupled to control a valve, has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Referring to claims 2, 12, Sturman teaches the control system of claim 1, wherein the control data comprises a data from *one of* a soil moisture sensor (Col. 10, lines 7-24), a temperature sensor, a relative humidity sensor, a light level sensor, a dissolved oxygen sensor.

Referring to claims 3, 5, 7, 9, 13-16, Sturman teaches the control system of claim 1, wherein the sensing circuit comprises a voltage or current measurement circuit coupled to the common line and control line (See Fig. 8 or 10, element 36 at port 6 is the on/off switch, there is a ground and control line coupled). While applicant may call the circuit a voltage or current measurement circuit, the claim does not require measurement of any voltage or current. Clearly

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Sturman provides for the microcomputer acknowledging a voltage or current or lack thereof, and therefore zero or not zero voltage or current.

Referring to claims 8, 10, Sturman teaches the control system of claim 7, wherein the current measurement circuit comprises an inductively coupled current detector *or* an in-line resistor (See figs. 8 or 10, the resistor at element 36).

Referring to claim 17, Sturman teaches a method for controlling an automatic sprinkler system comprising: coupling a relay in series with a common line of the automatic sprinkler system (See upper right circuit of Fig. 8 or 10 with the common line at the bottom); monitoring the common line to determine an on-off duration of an irrigation zone (See lower left circuit of Fig. 8 or 10, at element 36, the open switch has no voltage or current connected and therefore, in the closed circuit, the resistor is a wire and the monitoring of the switch is monitoring the common ground; Col. 8, lines 18-56; Figs. 8 and 9a, element 36); receiving control data used to determine a desired duration of the irrigation zone, the desired duration being equal to or less than the on-off duration of the irrigation zone (column 9 or column 8 or claims 1-7, if the programmed duration is to be skipped, it is less than the on-off duration programmed, i.e., duration of zero); turning on the relay to enable the irrigation zone and turning off the relay in response to the control data to disable the irrigation zone so that the irrigation zone is turned on for the desired duration (Figs. 8 or 10; Col. 6, lines 40-41; Col. 6, line 40 – Col. 7, line 42; Col. 11, claims 1-7).

Referring to claim 18, Sturman teaches the method of claim 17, wherein the desired duration comprises turning off the irrigation zone entirely (column 9 or column 8 or claims 1-7,

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if the programmed duration is to be skipped, it is less than the on-off duration programmed, i.e., duration of zero).

Referring to claims 19 and 20, Sturman teaches the method of claim 17, wherein monitoring an on-off duration of an irrigation zone comprises: coupling a measurement unit to the common or control line of the automatic sprinkler system, the measurement unit being a voltage or current measurement unit (See Fig. 8 or 10, element 36 at port 6 is the on/off switch, there is a ground and control line coupled).

Referring to claim 21, Sturman teaches the method claim 17, wherein monitoring the common line to determine an on-off duration of an irrigation zone comprises: monitoring the common line to determine the programming of the irrigation zone, the programming including the start time (See fig. 9a, store start watering time), the duration (See fig. 9a, store stop watering time), and the irrigation frequency of the irrigation zone (Col. 15, lines 5-10).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,811,221 to Sturman as applied to claims 1-3, 5, and 7-21 above, and further in view of U.S. Pat. No. 4,112,670 to Morozumi.

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Referring to claims 4 and 6, Sturman teaches all the limitations set forth above, however, fails to teach that the voltage measurement circuit, that is not even required to measure any voltage, comprises a transistor *or* an operational amplifier.

However, referring to claims 4 and 6, Morozumi teaches analogous art, wherein a voltage measurement circuit comprises a transistor *or* an operational amplifier (Col. 12, lines 64-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the teachings of Sturman with the teachings of Morozumi.

One of ordinary skill in the art would have been motivated to combine these references because Morozumi teaches a transistor can be used for effecting measurement of a voltage (Col. 12, lines 64-67). Furthermore, Morozumi teaches that by using the transistor, improved operation and reduced size of a timekeeping device is obtained, and flexible applicability is provided (Col. 9, lines 36-46).

Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean P. Shechtman whose telephone number is (571) 272-3754. The examiner can normally be reached on 9:30am-6:00pm, M-F.

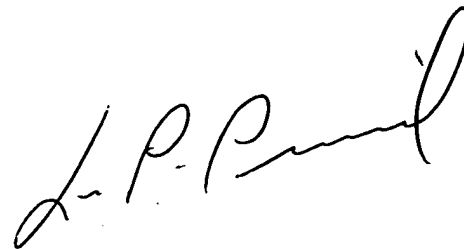
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P. Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SPS

Sean P. Shechtman

December 10, 2004

A handwritten signature in black ink, appearing to read "L. P. Picard", with a stylized, flowing script.

**LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100**